

CLAIMS:

1. A process for preparing aliphatic alcohols having from 7 to 17 carbon atoms by means of one or more reaction stages which each comprise the steps
 - a) cobalt-catalyzed hydroformylation of olefins having from 6 to 16 carbon atoms,
 - b) treatment of the hydroformylation mixture with oxygen-containing gases in the presence of acidic, aqueous cobalt(II) salt solutions,
 - c) separation of the mixture from b) into an aqueous phase comprising cobalt salts and an organic phase comprising the aliphatic aldehydes,
 - d) hydrogenation of the aldehyde-containing organic phase,wherein
 - e) the organic phase from c) is extracted with a water-containing liquid.
2. The process as claimed in claim 1, comprising a further step
 - f) separation of all or part of the organic phase from b) by distillation into a low-boiling fraction comprising unreacted olefins and an aldehyde-containing bottom fraction,wherein, in step e), the organic phase from c) and/or the aldehyde-containing bottom fraction from f) is extracted with a water-containing liquid.
3. The process as claimed in claim 1 or 2, wherein the extraction (step e) is carried out using pure water.
4. The process as claimed in claim 1 or 2, wherein the extraction is carried out using an aqueous solution or a mixture of water with a mineral

acid, a carboxylic acid and/or an organic solvent.

5. The process as claimed in any of claims 1 to 4,
wherein the pH of the water-containing liquid is
less than or equal to 7.
6. The process as claimed in any of claims 1 to 5,
wherein at least two reaction stages are carried
out and all or part of the organic phase separated
off in step c) is passed to step a) of the next
reaction stage.
7. The process as claimed in any of claims 2 to 6,
wherein all or part of the low-boiling fraction
separated off in step f) is returned to step a).
8. The process as claimed in any of claims 2 to 6,
wherein at least two reaction stages are carried
out and the low-boiling fraction separated off in
step f) is passed to step a) of the next reaction
stage.
9. The process as claimed in any of claims 2 to 6,
wherein at least two reaction stages are carried
out and the low-boiling fraction separated off in
step f) is passed to step a) of the next reaction
stage and the bottom fractions separated off in
step f) of all reaction stages are hydrogenated in
a joint step d).
10. The process as claimed in any of claims 2 to 6,
wherein two reaction stages are carried out and
the low boilers separated off in step f) of the
first reaction stage are passed to step a) of the
second reaction stage and the organic phase from
step b) of both stages is passed to step c) of the
first reaction stage.

11. The process as claimed in any of claims 2 to 6,
wherein two reaction stages are carried out and
the low boilers separated off in step f) of the
first reaction stage are passed to step a) of the
5 second reaction stage and the steps b), c) and d)
are each carried out jointly for the two reaction
stages.